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GEOGRAPHICAL PUBLICATIONS

(Reviews and Titles of Books, Papers, and Maps)

For key to classification see "Explanatory Note" in Vol. II, pp. 77-81

SOUTH AMERICA

GENERAL

NORDENSKIÖLD, ERLAND. **Om Indianernes Anvendelse af Gummi i Sydamerika. Et lille Bidrag til Gummiindustriens Historie.** Map, diagr. *Geografisk Tidsskrift*, Vol. 24, 1917, No. 3, pp. 80-86. Copenhagen.

When Roosevelt made the famous journey recorded in his book "Through the Brazilian Wilderness" he was astonished to find the Indians "playing football with their heads," using a hollow rubber ball perhaps eight inches in diameter, which they butted back and forth with their heads. Dr. Erland Nordenskiöld, the Swedish explorer, has unearthed some tales of early travelers who record similar games. Thus Gumilla in the eighteenth century saw the Orinoco Indians playing with a ball made of a juice called *caucho*, and Oviedo in the sixteenth century found the natives of Hayti playing with balls which evidently were made of rubber. The curious feature of these games was that the ball must always be caught with the head, shoulder, hip, or knee, never with the hands.

The author himself has seen Indians in various parts of South America playing ball with their heads. In his "Indianlif" he tells a charming fairy tale of the Chané Indians. Aguaratunpa has caught a white condor, and the bird offers him a houseful of silver dishes in return for its freedom. Aguaratunpa scorns the offer but bids the condor bring him the white rubber ball "tóki." The bird does so and wins its freedom but manages to recapture the ball as it bounds back and forth between the heads of the players. So Aguaratunpa catches another bird and sends it out for the black rubber ball.

Nordenskiöld believes that the Indians invented the rubber syringe and that the tube was probably suggested to them when forming hollow balls around a lump of clay and washing out the soil afterwards. He thinks they used rubber for various other utensils, for dolls for their children, and for impregnating cloth. In fact, he comes to the conclusion that the entire civilized rubber manufacture is based on experiments carried out by the Indians before the advent of the white man. HANNA A. LARSEN

BAILEY, S. I. **Astronomical work in South America.** *Proc. 2nd Pan Amer. Sci. Congr., Dec. 27, 1915, to Jan. 8, 1916*, Vol. 2, Section 2: Astronomy, Meteorology, and Seismology, pp. 12-16 (discussion, pp. 15-16). Washington, D. C., 1917.

BARCLAY, W. S. **The geography of South American railways.** Maps, diagr., ill. *Geogr. Journ.*, Vol. 49, 1917, No. 3, pp. 161-201; No. 4, pp. 241-282 (discussion, pp. 277-282). [Railroad development in South America is only beginning to assume international phases. Because of the local character of the systems, itself an aspect of "these curiously self-centered South American states," the systems of each state are considered separately.]

BAUER, L. A. **Status of magnetic surveys in South America by the Carnegie Institution of Washington.** Map. *Proc. 2nd Pan Amer. Sci. Congr., Dec. 27, 1915, to Jan. 8, 1916*, Vol. 2, Section 2: Astronomy, Meteorology, and Seismology, pp. 20-28 (discussion, pp. 26-28). Washington, D. C., 1917.

COLEMAN, A. P. **Permo-Carboniferous glacial deposits of South America.** Ills. *Journ. of Geol.*, Vol. 26, 1918, No. 4, pp. 310-324. ["Recent advances in the study of the South American Permo-Carboniferous glacial deposits bring that continent into the same rank as South Africa and Australia with respect to the area then covered by ice, while India has been much surpassed. The magnitude of the geological problem involved is growing from year to year, and the difficulty of accounting for such tremendous climatic changes is by no means lessening."]

FARABEE, W. C. **The Arawaks of northern Brazil and southern British Guiana.** Ills. *Amer. Journ. of Phys. Anthropol.*, Vol. 1, 1918, No. 4, pp. 427-442. Washington, D. C.

NORDENSKIÖLD, ERLAND. **Die Anpassung der Indianer an die Verhältnisse in den Überschwemmungsgebieten in Südamerika.** Maps, ill. *Ymer*, 1916, No. 2, pp. 138-155. Stockholm.

PARAGUAY, URUGUAY, ARGENTINA, CHILE

COOPER, J. M. **Analytical and critical bibliography of the tribes of Tierra del Fuego and adjacent territory.** ix and 233 pp.; map, bibliogr., index. *Bur. of Amer. Ethnology Bull.* 63. Smithsonian Institution, Washington, D. C., 1917.

Anthropogeographical literature is greatly enriched by the publication of this small book. The work falls naturally into several subdivisions. Pages 1-58 are taken up with valuable introductory remarks on the Yahgans, Alacalufs, Chonos, and Onas. The fullness of these remarks varies with the amount of available material, but in general their subject matter is grouped under headings: Names, Territory, Linguistics, Somatology, Culture, and Present Condition. Pages 59-64 are filled with an interesting review of the history, present status, and future of anthropological investigations in Fuegia. Pages 65-136 are occupied by a very extensive author bibliography in which every item enumerated is followed by critical remarks, often in the form of the contents of the work in question. Pages 137-228 contain an equally satisfactory subject bibliography which is incidentally a very full and stimulating outline of Fuegian somatology, linguistics, and culture.

One of the most important parts of Cooper's work is that which deals with the archeology and cultural relationships of the Fuegians, pages 218-228. This portion of the work is of value as showing that there are certain justificatory grounds for linking the Fuegians with the earliest peoples of South America and with the Lagoa Santa race. It remains to be seen to what degree this information will dovetail with that being gathered by Spinden and by the present reviewer on the archaic culture of Central and South America. In the meanwhile it is necessary merely to note that the Fuegians may turn out to be modern survivors of the archaic culture people on whom all later cultures in the region named succeeded. From the geographical standpoint this would be wholly natural, for it would be expected that the oldest, lowest-cultured, and weakest portion of the human race in Central and South America should be driven into the least desirable parts of the continent by succeeding waves of people. It is noteworthy that Cooper says (p. 219): "The length of occupancy of the archipelago is of course bound up with the larger question of the age of man in South America." He adds that it is evident that the present Fuegians have lived in their present habitat a very long time, a judgment which rests firmly on three aspects of the shell mounds which abound in Fuegia.

To sum up, one may say that Cooper's work is far more than a mere bibliography. It is a guide, full and scholarly, to the literature of Fuegian anthropology; it is an outline of the chief cultural features of the Fuegians; and it is a work which all future students of the subject will have to regard as their source book if they are not to go astray.

PHILIP AINSWORTH MEANS

— **Comodoro Rivadavia petroleum deposits.** Ills. *Bull. Pan Amer. Union*, Vol. 48, 1919, No. 2, pp. 177-182. Washington, D. C. [From *La Epoca*, Buenos Aires. Spanish version also in *Bol. Unión Panamericana*, Vol. 48, 1919, No. 2, pp. 183-190.]

KEIDEL, JUAN. **Sobre la nieve penitente de los Andes argentinos.** 84 pp.; diagrs., ill., bibliogr. *Anal. Minist. de Agric.: Sección de Geol., Mineral. y Minería*, Vol. 12, No. 4. Direcc. Gen. de Minas, Geol. e Hidrol., Buenos Aires, 1918. [The author's study of these interesting forms (now known to be in no sense peculiar to the southern Andes) leads him to the conclusion that neither wind nor ice movement produces these *penitentes*, but that they are the result solely of radiation brought to bear upon the ice surface from different angles with the daily and seasonal change of position of the sun.]

LARROUY, P. A. **Los indios del Valle de Catamarca: Estudio histórico.** 58 pp. (Facultad de Filosofía y Letras, Publ. de la Sección Antropológica No. 14). Reprinted from *Rev. Univ. de Buenos Aires*, Vol. 27, 1914.

— **Lluvias in 1916.** 43 pp.; diagr. *Inst. Meteorol. y Geofísico de Chile, Sección Lluvias Publ. No. 23*. Santiago de Chile, 1917. [Also contains summaries covering the years 1849-1916.]

MORANDI, LUIS. **Frecuencia, cantidad y modalidades de la lluvia y del granizo en Villa Colón (Montevideo) en el período 1884-1914.** Diagrs. *Proc. 2nd Pan Amer. Sci. Congr., Dec. 27, 1915, to Jan. 8, 1916*, Vol. 2, Section 2: Astronomy, Meteorology, and Seismology, pp. 225-234. Washington, D. C., 1917.

MORANDI, LUIS. **Síntesis general de los resultados obtenidos desde su fundación y en sus distintos secciones y servicios en el Instituto Nacional Físico-Climato-**

lógico del Uruguay. Maps, diagrs. *Proc. 2nd Pan Amer. Sci. Congr., Dec. 27, 1915, to Jan. 8, 1916*, Vol. 2, Section 2: Astronomy, Meteorology, and Seismology, pp. 779-824. Washington, D. C., 1917.

AFRICA

ATLAS REGION

PIQUET, VICTOR. **Le Maroc: Géographie—histoire—mise en valeur.** xii and 464 pp.; maps. Librairie Armand Colin, Paris, 1917. 6 fr. 8 x 5.

The splendid task of French colonization in Morocco is described in these pages. The author, already known by his historical studies of northwestern Africa, begins with an account of the region's geology based on the geological explorations of the past twenty years and in particular on the geological work of Louis Gentil. He then considers the climate and soil. These physical foundations having been laid, he proceeds with the history of the country, dwelling specially on the development of Moroccan affairs in the critical years between 1904 and 1912.

The book is valuable because of the comparison it affords between the condition of Morocco and its inhabitants before and after French intervention. Few chapters in the annals of French colonization deserve wider publicity than General Lyautey's work in Morocco. In presenting a concise summary of this task of reorganization the author has paid due acknowledgment to the ability of his countrymen in converting an important section of Africa from an unruly state into one in which justice now prevails.

The last pages contain a detailed account of the results obtained through the replacement of the Moroccan system of administration by French institutions. A feature that deserves commendation in the book is the comprehensive treatment of the subject, the author having succeeded in bringing together the main data on the geography, history, and economic development of Morocco.

— **Yebala y el bajo Lucus: Expedición de Abril-Junio de 1913.** xxxviii and 320 pp.; maps, diagrs., ill. Real Soc. Española de Hist. Nat., Madrid, 1914. 4 pesetas. 8½ x 6.

An account of the lower Lucus region. The physical geography of the Spanish zone in Morocco is described in detail. The importance of these studies is best appreciated by students of the structure of the Mediterranean basin. As a contribution to our knowledge of the tectonic relations between Europe and Africa the work is also of great value. Geographers no less than geologists will feel indebted to the Real Sociedad Española de Historia Natural, under whose auspices the field work was undertaken.

The first part comprises daily accounts for the entire itinerary. This diary is followed by chapters on vegetation and fauna in which agriculture is also considered. A final chapter on ethnography adds greatly to the value of the report. The author explains in his preface that these are all non-technical descriptions and that full accounts of the work and collections will appear in time in the *Boletín* and *Memorias* of the Society.

AUBRY, —. **L'élevage dans la région de Meknès.** *Bull. Soc. de Géogr. du Maroc*, Vol. 3, 1918, No. 5, pp. 39-54. Casablanca.

BEN DANOU, C. **Contribution à l'étude de l'industrie pastorale en Algérie et au Maroc. Note sur les laines du Sud Oranais et du Maroc.** With a preface by — Toupnot. *Diagr. Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 36, 1916, No. 3-4, pp. 293-340.

BEN DANOU FRÈRES. **L'avenir de l'élevage et du commerce d'exportation du mouton. Abatage sur place et frigorification.** *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 37, 1917, No. 2, pp. 175-202.

BERNARD, AUGUSTIN. **Nos grandes colonies et la guerre: Algérie.** *Rev. des Sci. Polit.*, Vol. 36, 1916, August 15, pp. 1-29. Paris.

BERNARD, AUGUSTIN, and EDMOND DOUTTÉ. **L'habitation rurale des indigènes de l'Algérie.** Map. *Ann. de Géogr.*, No. 141, Vol. 26, 1917, pp. 219-228.

BERNARD, FRANÇOIS. **Le Maroc économique et agricole.** 212 pp.; map. Georges Masson, Paris, 1917. 4 fr. 10 x 6½.

BERTRAND, GUSTAVE, AND ÉTIENNE DELHOMME. **Notice sur El Ksar El Kebir et la région du Khlott (Maroc franco-espagnol).** *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 37, 1917, No. 3-4, pp. 217-255.

BESNARD, RENÉ. **Le rail dans l'Afrique du Nord.** Map. *Colonies et Marine*, Vol. 2, 1918, No. 7, pp. 162-185. Paris.

CAMPARDOU, J. **La grotte de Kifan bel Ghomari à Taza (Maroc).** Maps, ills. *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 37, 1917, No. 1, pp. 2-26.

CERECEDA, J. D. **La zone espagnole du Maroc.** Diags., ills. *Ann. de Géogr.*, No. 137, Vol. 25, 1916, pp. 366-373. [Abstracted in the *Review*, Vol. 3, 1916, p. 402.]

DÉCHAUD, E. **Une mission commerciale au Maroc.** *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 37, 1917, No. 1, pp. 27-102.

DEMONTÈS, VICTOR. **La Tunisie pendant la guerre.** *Bull. Soc. de Géogr. d'Alger et de l'Afrique du Nord*, Vol. 21, 1916, No. 1, pp. 26-76. Algiers.

DEMONTÈS, VICTOR. **Les lignites du Cap Bon.** Diags. *Bull. Soc. de Géogr. d'Alger et de l'Afrique du Nord*, Vol. 23, 1918, No. 2, pp. 151-198. Algiers.

DUPUY DE LÔME, E., J. M. DEL BOSCH, A. DEL VALLE, AND P. FERNANDEZ IRUEGAS. **Estudios relativos á la geología de Marruecos.** Maps, diags., ills. *Bol. Inst. Geol. de España*, Vol. 38 (Vol. 18, 2nd Ser.), 1917, pp. 15-254. Madrid. [The introduction by D. Agustín Marín, chief of the Commission, outlines the plan of work—which follows the course of pacification—and gives a résumé of the geology, hydrology, and mineralogy of the zones subsequently treated in detail—Melilla, the Atlantic zone from Larache to Tangier, the Mediterranean zone from Ceuta to Tetuán.]

FOURGOU, J. **Le Maroc et son avenir économique.** Map, diags., ills. *Bull. Soc. de Géogr. de Toulouse*, Vol. 35, 1916, No. 2, pp. 191-219.

GALINIER, C. **Les Beni Mathar de Ras el Aïn (Berguent).** Maps. *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 37, 1917, No. 2, pp. 131-174.

GARDEY, ABEL. **Les ressources forestières du Maroc.** Map, ills. *Colonies et Marine*, Vol. 3, 1919, No. 1, pp. 33-40. Paris.

GAUTIER, E. F. **Le Chott Tigri.** Maps, ills. *Ann. de Géogr.*, No. 135, Vol. 25, 1916, pp. 181-189; No. 136, pp. 291-302.

GENTIL, LOUIS. **Esquisse hydrologique de la région de Meknès.** *Bull. Soc. de Géogr. Comm. de Paris*, Vol. 36, 1914, June, pp. 385-397.

GENTIL, LOUIS. **Les analogies du Haut Atlas marocain et de l'Atlas saharien.** Reprint from *Comptes Rendus de l'Acad. des Sci. [de Paris]*, Vol. 161, 1915, Aug. 2, pp. 103-105.

GENTIL, LOUIS. **Sur la structure de la zone littorale de l'Algérie occidentale.** Reprint from *Comptes Rendus de l'Acad. des Sci. [de Paris]*, Vol. 156, 1913, March 25, pp. 965-968.

GENTIL, LOUIS. **Sur la tectonique du Haut Atlas marocain et ses relations avec l'Atlas saharien.** Reprint from *Comptes Rendus de l'Acad. des Sci. [de Paris]*, Vol. 154, 1912, April 15, pp. 1011-1013.

GENTIL, LOUIS. **Sur l'origine des plis de l'Atlas saharien.** Diagr. Reprint from *Comptes Rendus de l'Acad. des Sci. [de Paris]*, Vol. 154, 1912, April 29, pp. 1191-1193.

GENTIL, LOUIS, AND L. JOLEAUD. **Les nappes de charriage de l'Afrique du Nord.** Map. *Rev. Gén. des Sci.*, Vol. 29, 1918, Oct. 15, pp. 533-540. [On the overthrust folds in the Atlas system.]

GENTIL, LOUIS, AND PEREIRA DE SOUSA. **Sur les effets au Maroc du grand tremblement de terre en Portugal (1755).** Reprint from *Comptes Rendus de l'Acad. des Sci. [de Paris]*, Vol. 157, 1913, Nov. 3, pp. 805-807.

JOANNIS, R. **Excursion aux grottes de Moulaï Ahmed ou du Zegzel (Maroc oriental).** Map, diags. *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 36, 1916, No. 3-4, pp. 278-284.

KOECHLIN, RAYMOND. **Le Maroc en paix: Un coup d'œil d'ensemble.** *L'Afrique Française*, Vol. 26, 1916, No. 10-12, pp. 355-367. Paris.

MACLEOD, J. M. **The achievements of France in Morocco.** Maps, ills. *Geogr. Journ.*, Vol. 52, 1918, No. 2, pp. 84-105 (discussion, pp. 101-105).

— **Maroc, Carnet des itinéraires principaux du.** Maps, indexes. Part I, *Partie nord*, 90 pp.; Part II, *Partie sud-ouest*, 127 pp.; Part III, *Partie orientale*, 72 pp. Bureau Topographique du Maroc, Casablanca, 1917. 2 fr. 50, 3 fr., 2 fr. 8 x 5½.

— **Marruecos, La zona de influencia española en: Reseña geológica y descripción geográfica.** *Rev. de Geogr. Colon. y Mercantil*, Vol. 15, 1918, No. 4-5, pp. 121-161; No. 6-7, pp. 201-242. Real Soc. Geogr., Madrid. [A review of "Estudios Relativos á la Geología de Marruecos," by E. Dupuy de Lôme and others, listed above.]

MARUCCHI, ANTONIO. **La granicoltura nei territori dell'antica Africa Romana.** *L'Africa Italiana*, Vol. 35, 1916, No. 8, pp. 153-172. Naples.

MILLET, PHILIPPE. **Problems of French North Africa.** *Journ. Royal Soc. of Arts*, No. 3368, Vol. 65, 1917, pp. 515-525. London. [Abstracted in the *Review*, Vol. 5, 1918, p. 76.]

MOUREY, CHARLES. **Le commerce du Protectorat français du Maroc de 1913 à 1915.** *Renseign. Colon. (Suppl. à l'Afrique Française)*, 1917, No. 3, pp. 49-62. Paris.

NAVARRO, L. F. **Expedición científica á la Península Yebálica.** 27 pp.; map, ills. Asociación Española para el Progreso de las Ciencias, Madrid, [1913]. [Northwestern Morocco; an address delivered at Madrid June 20, 1913.]

NAVARRO, L. F. **Observaciones geológicas en la isla de Gomera (Canarias).** 87 pp.; map, diagrs., ills. *Trab. Museo Nacl. de Cienc. Nat., Ser. Geol. No. 23*. Madrid, 1918.

NOËL, A.-H. **Documents pour servir à l'histoire des Hamyan et de la région qu'ils occupent.** Maps. *Bull. Trim. Soc. de Géogr. et d'Archéol. d'Oran*, Vol. 35, 1915, No. 2, pp. 121-197; No. 3-4, pp. 249-303; Vol. 36, 1916, No. 1, pp. 5-60; No. 2, pp. 117-192.

PERROT, CHARLES. **Forêts de la région Ito, Ifrane, Azrou et Aïn-Leuh.** ills. *Bull. Soc. de Géogr. du Maroc*, Vol. 3, 1918, No. 5, pp. 55-68. Casablanca.

REBOUL, ANDRÉ. **L'Azaghar de Tiznit.** Maps. *La Géographie*, Vol. 32, 1918, No. 1, pp. 1-9. Paris. [A plain at the foot of the Anti-Atlas south of Agadir. The region is poor and scantily watered, but the geological structure permits a hope of obtaining abundant subterranean sources whereby irrigation could be practiced.]

S—, R. DE. **Le Sud Marocain.** *Renseign. Colon. (Suppl. à l'Afrique Française)*, 1917, No. 5-6, pp. 130-137. Paris.

SALTER, J. H. **Regional distribution of the native flora in Tenerife.** ills., bibliogr. *Memoirs and Proc. Manchester Literary & Philos. Soc.*, Vol. 62, 1917-18, Part III, No. 8, pp. 1-16.

EAST AFRICA

DRACOPOLI, I. N. **Through Jubaland to the Lorian Swamp: An adventurous journey of exploration and sport in the unknown African forests and deserts of Jubaland to the unexplored Lorian Swamp.** 318 pp.; maps, ills., index. Seeley, Service & Co., Ltd., London, 1914. 10s. 6d. 9 x 6.

Jubaland is the northern region of British East Africa and the southern part of the still largely unknown country extending southward from Abyssinia. Dracopoli is the only explorer who has penetrated this part of Africa between 41°30' E. and the Lorian Swamp. About two-thirds of his route survey from the Indian Ocean to the Lorian Swamp was thus through unknown country.

The explorer entered Jubaland at the port of Kismayu; his destination was the Lorian Swamp, about 300 miles inland, but his circuitous route added much to the length of his journey. Behind the coastal sands most of the country is covered with gray thorn bushes, difficult to travel through, interspersed with vast patches of reeds, 12 to 14 feet high, and occasional flat meadowland, green during the torrential rains. There are no mountains, rivers, or lakes; monotony is the keynote of the land. The scrub rising above the heads of the men completely obscures the view but is no protection against the burning sun. The ground is so hot at times as to be painful even through thick boots, and at the same time the humidity is great. Dracopoli regards the climate of Jubaland as distinctly unhealthy. Only three of his twenty-six men escaped attacks of malarial fever. The author calls this large region the East Africa desert jungle. Its only inhabitants are elephants, giraffes, dik-dik, a small variety of the antelope family, and birds. Along the western fourth of the journey, leading

nearly to the mountains from which the Lorian Swamp derives its waters, the whole region is fairly well watered, and a considerable variety of African game is found.

The Somali live to the west of the desert region, along the upper Dera River, the outlet of the Lorian Swamp, and farther west, where there is forage for their cattle. No agriculture is found because the water supply, even there, is intermittent; and so the Somali wander from place to place seeking the best grazing and abundant water. More of them are moving into the country from the north. Perhaps the motive for this migration is to escape the troublous conditions that the remarkable régime of the Mad Mullah has imposed upon so much of Somaliland.

Dracopoli has cleared up the geography of the Lorian Swamp region, and this is one of his best geographical results. East of the Marti Plateau there are three slight depressions of the land through which the Uaso Nyiro flows, and a swamp occupies each depression. The central swamp is the Lorian, many times the largest, with a circumference of about fifty miles. The river flows in large volume through it, and its borders are banked by tall grasses and reeds. The land around the swamp is a rich alluvial plain that may easily be irrigated from the river. The author says that rice, cotton, and sugar would thrive well on this plain.

The book contains much scientific information and is also adapted to sustain the interest of any intelligent reader. Its map contains good material for the improvement of our atlases, including contours of elevation, along the route, at 100-foot intervals, showing the very gradual rise of the plain from sea level to 1,400 feet at the Marti Plateau in the west.

CYRUS C. ADAMS

BRIEY, RENAUD DE. **Belgium and Germany in Africa.** Map, diag., ill. *Geogr. Journ.*, Vol. 51, 1918, No. 5, pp. 293-306 (discussion, pp. 303-306). [In 1917 the Comte de Briey was sent on an official mission to German East Africa. He here gives notes on the western and northwestern portions of the country, i. e. along the central railroad and in Ruanda. Construction of the central railroad produced as powerful an economic effect on the country as the building of the Uganda Railroad did in British East Africa. This is shown in a graph. As soon as the railroad reached Tabora it began to exert a wide sphere of attraction, being very strongly felt in the Victoria Nyanza region. It is well known that the German economists aimed at tapping Katanga and in general making the Belgian Congo an economic hinterland of the German colony. *Le Mouvement Géographique* for June 7, 1914, published an interesting expression of this intention. Comte de Briey's article is accompanied by a hypsometrical map of the northwestern portion of German East Africa.]

CANA, F. R. **Frontiers of German East Africa.** Map. *Geogr. Journ.*, Vol. 47, 1916, No. 4, pp. 297-303.

GUIDI, IGNAZIO. **Le popolazioni delle colonie Italiane.** 14 pp. *Minist. delle Colonie Rapporti e Monografie Coloniali* No. 10. Direz. Centrale degli Affari Coloniali. Rome, 1913.

PALAZZO, L. **La distribuzione della forza magnetica terrestre nella media Eritrea.** Map. Reprint from *Rendiconti della R. Accad. dei Lincei: Classe di sci. fis., mat. e nat.*, Vol. 24, 1915, No. 1, pp. 48-54. Rome.

SHARPE, ALFRED. **Reconstruction in eastern Africa.** Map. *Scottish Geogr. Mag.*, Vol. 34, 1918, No. 7, pp. 241-251. [Suggests that the anomaly of separate administration for British East Africa and Uganda should be rectified. The suggestion is carried further in the proposal for centralizing authority here by the appointment of one Governor General for all British territory north of the Zambesi and south of the Sudan. Whatever the fate of German East Africa, certain rectifications of frontier are desired—certain sections of the northern part of the colony, including Ruanda, Kilimanjaro, and Usambara to the contiguous British areas, Kondeland in the south to Nyasaland. Problems in transportation, government, lands, and native questions, including labor, are also touched upon.]

SMUTS, J. C. **East Africa.** Map, ill. *Geogr. Journ.*, Vol. 51, 1918, No. 3, pp. 129-149 (discussion, pp. 145-149). [After describing the geographical features that loomed large in the East African campaign, General Smuts refers to certain considerations, economic and political, that affect the future of the country. He doubts whether East and Central Africa will ever become a white man's country in any real sense. Germany, however, has never encouraged any movement in this direction in her protectorate but has slighted the white settler with the small farm for the capitalist planter. The German theory of colonization, moreover, has its militaristic basis: this is revealed in the German schemes of a "Mittelafrika." General Smuts's paper is fortunately illustrated by a

hypsothetic map showing the 200-meter contour and contours at 500-meter intervals. The same issue of the *Geographical Journal* also contains "Notes on the South-Western Area of 'German' East Africa" by Owen Letcher.]

TOBLER-WOLFF, GERTRUD, AND F. TOBLER. **Vegetationsbilder vom Kilimandscharo.** 24 pp.; map, ills. (Vegetationsbilder, Ser. 12, No. 2-3. Herausgegeben von G. Karsten und H. Schenck.) Gustav Fischer, Jena, 1914.

WOODHOUSE, C. W. **Game and war.** Map. *Journ. East Africa and Uganda Nat. Hist. Soc.*, Vol. 5, 1916, No. 10, pp. 71-76. London. [The article deals with observations made in and prior to the war and during the first year of hostilities in British East Africa. The disturbance to local fauna has involved actual destruction and change in feeding grounds; but, with the probable exception of the rhinoceros, loss is believed to be merely temporary. Effect on migrations is well illustrated in the case of the elephant, which normally moves eastward from Kilimanjaro with the beginning of the long rains of spring. During 1914 the movement was as usual, but during 1915 only a few stray herds were reported in their usual habitats. The line of migrations is shown in a map accompanying the article.]

ASIA

MANCHURIA, KOREA, JAPAN

OMORI, F. **The Sakura-jima eruptions and earthquakes: Course of activity in the Sakura-jima eruption of 1914.** Maps, diagrs., ills. *Bull. Imp. Earthquake Investigation Committee*, Vol. 8, 1916, No. 3, pp. 181-321. Tokyo.

Besides the expectable features in this report there are several points of special interest. The sketches and maps are well made, many of the descriptions have broad physiographic interest, and the photographs are among the very best that have ever been published in the field of vulcanology. It would be difficult to find elsewhere photographs which could compare with Figure 35, showing a floating pumice layer outside the harbor of Kagoshima; or the admirable view, Figure 8, taken about one hour after the beginning of the eruption of Sakura-jima; or the phenomena exhibited by craterlets in Figures 86 and 91. Not the least striking is Figure 127, showing the vigorous evaporation of sea water at the edge of a broad and fresh lava flow.

— **Chosen, Results of the meteorological observations made at, for the lustrum 1911-1915.** 27 pp. Meteorol. Observatory of the Government-General of Chosen, Jinsen (Chemulpo), 1917.

HANABUSA, NAOSABURO. **Graphiques statistiques sur l'état de la population de l'Empire du Japon.** 25 pp.; maps, diagrs. Bur. de la Statistique Générale, Cabinet Impérial, Tokyo, 1916.

HANABUSA, NAOSABURO. **Résumé statistique de l'Empire du Japon.** Vol. 30. xvi and 225 pp.; diagrs. Bur. de la Statistique Générale, Cabinet Impérial, Tokyo, 1916. 2.66 yen. 10 x 7.

ISHII, SHINJI. **The island of Formosa and its primitive inhabitants.** Map, ills. *Trans. and Proc. Japan Soc.*, Vol. 14, 1915-16, pp. 38-60. London.

KOTÔ, BUNDJIRÔ. **The great eruption of Sakura-jima in 1914.** 237 pp.; maps, diagrs., ills., index. *Journ. College of Sci., Tokyo Imp. Univ.*, Vol. 38, 1916, Art. 3. Tokyo.

— **Manchuria and Korea, The railways of.** Maps, ills. *Far Eastern Rev.*, Vol. 14, 1918, No. 4, pp. 143-153. Shanghai.

— **North Manchuria, New railways in: Russia consolidates her position.** Map, ills. *Far Eastern Rev.*, Vol. 12, 1916, No. 11, pp. 415-419. Shanghai. [For comment see note on "Proposed New Railroads in the Russian Empire" in the *Review*, Vol. 2, 1916, p. 472.]

ŌINOUE, Y. **A few interesting phenomena on the eruption of Usu.** Map, diagrs., ills. *Journ. of Geol.*, Vol. 25, 1917, No. 3, pp. 258-288.

SMOTOMAI, H[IDEZÔ]. **Der vulkanische Kessel Kutscharo.** Map. *Zeitschr. für Vulkanologie*, Vol. 2, 1916, No. 3, pp. 137-139. Berlin.

SMOTOMAI, HIDEZÔ. **Physiographic development of the Tarumai dome in Japan.** Maps, diagrs., ills., bibliogr. *Amer. Journ. of Sci.*, No. 260, Ser. 4, Vol. 44, 1917, pp. 87-97.

SMOTOMAI, H[IDEZÔ]. **Vergleichende Übersicht der vulkanischen Tätigkeit der Fuji- und Kirishima-Vulkanzonen in Japan.** Map. *Zeitschr. für Vulkanologie*, Vol. 2, 1916, No. 3, pp. 129-137. Berlin.

TORII, R. **Études archéologiques et ethnologiques: Populations préhistoriques de la Mandchourie méridionale.** 80 pp.; map, diags., ill. *Journ. College of Sci., Tokyo Imp. Univ.*, Vol. 36, 1915, Art. 8. [From 1895 to 1913 the Anthropological Society of Tokyo carried out a series of five explorations in Manchuria and adjacent territories. The volume in hand pertains to the Liaotung Peninsula and the basin of the lower Liao River.]

WESTON, WALTER. **Exploration in the northern Japanese Alps.** Ills. *Geogr. Journ.*, Vol. 46, 1915, No. 3, pp. 188-200. [Read before the Royal Geographical Society, May 31, 1915. An abridgment, entitled "Recent Explorations in the Japanese Alps," was published in *Scottish Geogr. Mag.*, Vol. 32, 1916, No. 7, pp. 306-315. Under the first title a different paper (read before the Alpine Club, June 1, 1915) was published in *Alpine Journ.*, No. 213, Vol. 30, 1916, pp. 246-259.]

AUSTRALASIA AND OCEANIA

AUSTRALIA, NEW ZEALAND

MJÖBERG, ERIC. **Bland vilda djur och folk i Australien.** 524 pp.; maps, ill., index. Albert Bonniers Förlag, Stockholm, 1915. 15 kronor. 9½ x 6½.

"Among Wild Animals and People in Australia" is the title of the present volume by the Swedish explorer, Eric Mjöberg. It is an account of his trip through the hitherto unexplored regions of the Kimberley District in Western Australia, in 1910 and 1911. Several large public and private stipends granted the author in his native land made it possible for him to carry a very complete outfit, and the loan of a large bullock wagon and span of twenty oxen by the Australian government facilitated the transport.

The journey into the interior began on October 26, 1910, from Derby on King Sound. After passing through a dreary stretch of bush, the party crossed the Grant Range and journeyed across a rocky plateau to Noonkanbah sheep station. At this little group of corrugated iron houses, the center of a flock of ten thousand sheep, Dr. Mjöberg unloaded his wagon and proceeded to make various excursions in the nearby mountains. Not far away lies Skeleton Hill, where the natives still "bury" their dead by tying the body to a bier of branches and placing it in a tree top. He succeeded in carrying away several complete skeletons and in taking numerous interesting photographs of this strange cemetery.

The study of the Australian aborigines is of especial importance, since they are a rapidly dying race. In spite of the efforts of the government, syphilis and tuberculosis work great havoc among them, and in a few generations they may have disappeared entirely. Peculiar interest attaches also to the flora and fauna of Australia. The continent has been called a great open-air museum for living antiquities. Scientists hold that, in the Cretaceous period, Asia was completely separated from Australia and that the latter pursued an independent development, which, however, lags far behind that of the rest of the world. Specimens from the Tertiary and even from the Cretaceous period are still extant. For instance, the pouched animal or marsupial was once prevalent all over the world, but in the other continents it has given place to more highly organized species. In Australia the marsupial may still be studied in all its variants, the most important being, of course, the kangaroo. On the other hand, the author calls attention to the fact that no important edible plant and no domestic animal in common use has originated in Australia. This he believes to be one reason for the low state of the Australian natives, who have never learned to harness nature. He declares that in many places they do not even know how to make the mental connection between plant and seed. Yet they seem in every way normal; their senses are highly developed, and they have originated the most curious of all weapons, the boomerang.

Dr. Mjöberg was himself in charge of the zoölogic and botanical researches of the expedition as well as the anthropologic and ethnographic, including the task of collecting skeletons. In his ethnographic investigations he was assisted by Mr. Yngve Laurell. His other two white companions were Mr. Rudolf Söderberg, the ornithologist of the expedition, and Mr. Cyrus Videll, who did the work of preservation. The results of the expedition included many thousands of specimens of vertebrate and invertebrate animals carefully preserved. A number of valuable photographs were taken. The book has two hundred and thirty illustrations, a few of these being in color.

Returning to Derby in April, 1911, the author afterwards spent some time in coast and marine investigations in Dampier Land before departing for Sweden.

HANNA ASTRUP LARSEN

REID, A. MCL. **The North Pieman and Huskisson and Sterling Valley mining fields.** vi and 132 pp.; maps, diagrs., ill. *Geol. Survey of Tasmania Bull. No. 28.* Hobart, 1918. [Some twenty pages of this Bulletin are devoted to a geographical description of the area, one of the most rugged portions of the west coast division, concerning which no detailed account has hitherto been published.]

— **South Australian Museum expedition to Strzelecki and Cooper Creeks, September and October, 1916, Results of the.** Maps, ill. E. R. WAITE: **Introduction, Narrative, General notes, Meteorology,** pp. 405-424; H. A. HUNT: **Notes on the rainfall,** pp. 424-429; E. R. WAITE: **The natives, Mammalia and Ophidia,** pp. 429-440; S. A. WHITE: **Aves,** pp. 441-466; A. M. LEA: **Stomach contents of birds,** pp. 466-468; F. R. ZIETZ: **Lacertilia,** pp. 469-472; A. R. MCCULLOCH AND E. R. WAITE: **Pisces,** pp. 472-475; CHARLES CHILTON: **Crustacea,** pp. 475-482; W. J. RAINBOW: **Araneidae,** pp. 482-489; A. M. LEA: **Insecta,** pp. 489-630; J. M. BLACK: **Botany,** pp. 631-658. *Trans. and Proc. Royal Soc. of South Australia*, Vol. 41, 1917, pp. 405-658. Adelaide. [Notes on the desert and semi-arid region east of Lake Eyre.]

TEALE, E. O. **Soil survey and forest physiography of Kuitpo, South Australia.** 19 pp.; maps, diagrs. *Univ. of Adelaide Dept. of Forestry Bull. No. 6.* Adelaide, 1918.

WHITE, S. A. **Scientific notes on an expedition into the northwestern regions of South Australia.** Maps, ill. *Trans. and Proc. Royal Soc. of South Australia*, Vol. 39, 1915, pp. 707-842. Adelaide. [In the capacity of biologist the author accompanied the reconnaissance expedition of 1914 organized by the Geological Survey of South Australia. This expedition was noted in the Record item "A Proposed Expansion of the Pastoral Industry of South Australia," *Geogr. Rev.*, Vol. 1, 1916, p. 377.]

WHITE, S. A. **The flora of the country between Oodnadatta and the Musgrave and Everard Ranges.** *Geol. Survey of South Australia Bull. No. 5*, pp. 55-57. Adelaide, 1915.

WOODWARD, H. P. **The coal resources of Western Australia.** Maps. *Geol. Survey of Western Australia Bull. No. 64*, pp. 7-12. Perth, 1915. ["Written for the International Geological Congress, Canada, 1913."]

WOOLNOUGH, W. G. **The physiographic significance of laterite in Western Australia.** Map, diagr. *Geol. Mag.*, Decade 6, Vol. 5, 1918, No. 9, pp. 385-393. London.

— **Australia, Rain map of, for the year 1917.** [1:8,500,000 approx.] On reverse side: maps, 1:32,000,000, showing the rainfall for each month during 1917. (The figures are based on the daily reporting stations and are therefore only approximate.) [Central Weather Bureau], Melbourne, 1918. [For additional comment see Record item "Rainfall Maps of Australia," *Geogr. Rev.*, Vol. 6, 1918, p. 373.]

FOX, H. W. **Geological sketch map of Queensland, showing mineral localities.** [1 in to 39 miles, or 1:2,500,000.] 3rd edit., revised to 1907. *Geol. Survey of Queensland Publ. No. 217.* Brisbane, 1907.

— **South Australia [showing land elevations.]** [1:3,000,000.] Geological Survey, Adelaide, 1917.

OCEANS

SCHOTT, G., B. SCHULTZ, AND P. PERLEWITZ. **Die Forschungsreise S. M. S. "Möwe" im Jahre 1911.** vi and 104 pp.; maps, diagrs., ill. *Aus dem Archiv der Deutschen Seewarte*, Vol. 37, 1914, No. 1. Hamburg.

This paper presents the physical observations obtained during the period from May to October, 1911, in a coastal belt 250 miles wide off the west coast of Africa from Cadiz, 35° N., to Cape Town, 33° S. Surface water samples were taken twice a day for accurate salinity determinations, and the usual meteorological observations and surface temperatures were taken every four hours. At 59 stations serial observations of temperature and salinity from the surface to the bottom were made, and the surface current was estimated from angular measurements relative to a float. At 30 stations the Ekman current meter was used at depths less than 100 meters. Careful determinations of the ship's position at noon from astronomical observations, and from the log and course, gave estimates of the current in fair agreement with the other method. In order to determine the variation of the biological facies of the bottom with respect to the varying physical conditions from shallow to deep water, samples were collected at each station. A limited amount of aerological work was done with the aid of kites and sounding balloons.

Three regions, the northern, middle or equatorial, and southern, corresponding respectively to the Canary, Guinea, and Benguela Currents, are discussed separately because of the great difference in their physical conditions. Serial observations of temperature and salinity were made along two sections perpendicular to the coast in the northern region and three in the southern one, and also along a longitudinal section of each region.

Because of the upwelling of cold bottom water, the northern region is characterized by an increase of temperature from the coast, where it is 1° C. below the normal, and a very small north-to-south temperature gradient. The air temperature is 1° C. above that of the water. Strong northwest winds (4 Beaufort), usually accompanied by a strong southerly surface current (0.5 to 1.5 miles per hour), prevail. The flow from the Mediterranean gives rise to high temperatures and salinities below 600 meters in the northern part. The salinity of the upper 50 meters increases as the distance from the coast increases.

In the middle or equatorial region high surface temperatures (25° C.) and an excess of water over air temperatures prevail, but water temperatures below 20° C. occur in a limited upwelling region near Lome only 7° from the equator. Along the part of the coast running east and west is a strong surface current (1 mile per hour) toward the northwest except near Lome, where it is parallel to the coast. Southwest winds (3 Beaufort) prevail.

The southern region is characterized by low surface temperatures, due to upwelling. The prevailing drift is to the northwest at the rate of 0.2 to 1.5 miles per hour, and the prevailing wind is from the southwest (4 Beaufort).

The observed change in direction and velocity with respect to depth accords qualitatively with Ekman's theory of currents due to wind. In general no marked divergence from former observations appears.

GEORGE F. McEWEN

HEPWORTH, M. W. C. *The relation between pressure, temperature, and air circulation over the South Atlantic Ocean*. 2nd edit. 14 pp.; maps, index. *M[eteorol.] O[ffice Publ. No.]* 177. Meteorological Office, London, 1917. 1s. 9½ x 6. [New edition of notes published in 1904, with pressure readings corrected for latitude in accord with international convention and expressed in millibars.]

MACGREGOR, WILLIAM. *The settlement of the Pacific*. *Scottish Geogr. Mag.*, Vol. 34, 1918, No. 5, pp. 161-177.

— *Océan Indien I', Observations océanographiques et météorologiques dans; Septembre, Octobre, Novembre (1856-1914)*. xi and 240 pp.; maps, diagrs. *Kon. Nederl. Meteorol. Inst. [Publ.] No. 104*. Utrecht, 1915. [With charts.]

RYDER, C. *Monthly mean temperatures of the surface water in the Atlantic, north of 50° N. lat.* 21 pp.; maps, diagrs. Appendix to the *Nautical Meteorological Annual*, Dansk Meteorol. Inst., Copenhagen, 1917. [The charts have been drawn upon the basis of observations from Danish vessels made during the years 1876-1915, supplemented by data from various published sources. An important feature is the division of the material into decades, whence, among other advantages, it will be the more readily adaptable for use in the study of climatic change.]

WORLD AS A WHOLE AND LARGER PARTS

HARING, C. H. *Trade and navigation between Spain and the Indies in the time of the Hapsburgs*. xxviii and 371 pp.; map, bibliogr., index. (Harvard Economic Studies, Vol. 19.) Harvard University Press, Cambridge, 1918. \$2.25. 9 x 6.

For many years students of the colonization of the New World have felt the want for a book of just the kind that has been brought out by Professor Haring. It is almost impossible to understand the commercial features of the Spanish Conquest of the Americas without making laborious search throughout the records. This search frequently entails the consultation of hundreds of books and pamphlets. Thanks to the author of this volume, one now has a handbook on the subject which is not only authoritative but unique.

The volume is divided into two parts, the first part dealing with the trade created and the second part with the various matters pertaining to navigation of ships between Spain and the Americas. Step by step, the author traces the development of commerce, from the beginnings of the American trade until the institution of the Casa de Contratación. This powerful organization held approximately the same position in Spain as subsequently did the Dutch East India and the Dutch West India Companies in the Netherlands. The ordinances and royal decrees conferring various powers upon the

Casa de Contratación are traced in chronological order, as are the laws and judgments promulgated by the Council of the Indies. The regulations regarding the working of mines within the jurisdiction of the Spanish Crown in the West Indies and South America throw an interesting light upon the grasping policy of the Court. We find a lengthy and valuable discussion on the use of quicksilver in the extraction of silver, a process that was first discovered by a Mexican miner in 1556. Not only did the Crown derive its royal percentage of all silver mined, but it additionally declared the sale of quicksilver to be a royal monopoly, thereby creating two profits on all mining operations.

The second part of the book, on navigation, can unhesitatingly be said to contain the most exhaustive information on ships and their management in the sixteenth and seventeenth centuries of all monographs on the subject. This part discusses the kind of ships of that epoch, the various inspections and the regulations regarding the fitting out of craft designed for oversea traffic and even gives figures showing the pay received not only by the crew but by the higher officials appointed by the Crown. A noteworthy fact as giving an insight into the jealous care with which the Spanish sovereigns guarded their prerogatives was the appointment of a *veedor*, a sort of king's attorney, to each fleet leaving home waters, whose duties consisted in seeing that "all laws and ordinances regarding the management and governance of the fleet were observed, and that each man performed his duties, from the captain general down to the least of the commissioned officers. . . . He was at the general's side during the inspections and musters, a sort of royal watchdog for all occasions."

The organization of convoys for transmission of the wealth of the Indies to Spain is discussed at length, and the reasons for the easy capture of many of the more important South American and West Indian towns, such as Cartagena, Panama, and Havana, by pirates and freebooters, are explained. It is shown how the French, English, and Dutch privateers, the latter two named "Lutheran Corsairs" by their Spanish adversaries, were finally responsible for the collapse of the commercial edifice the Casa de Contratación had so carefully erected. That a great deal of this decline was directly due to a penurious policy of the home government, which would not devote sufficient funds for the fortification of its principal strongholds in the Americas, can be judged from the angry protests of the colonists, whose cities were often without the most elementary means of defending themselves against foreign invaders. As a result, the amount of tribute paid to besieging privateers by the more exposed cities amounted to incredible sums.

A very complete, classified bibliography is found at the beginning of the volume and is of high value to students of this epoch.

THEODOOR DE BOOY

CONSCIENCIA, M. S. *Navegação luso-americana*. 89 pp.; map, ills. Soc. de Geogr. de Lisboa, Lisbon, 1916.

COOK, O. F., AND R. C. COOK. *The maho, or mahagua, as a trans-Pacific plant*. *Journ. Washington [D. C.] Acad. of Sci.*, Vol. 8, 1918, No. 6, pp. 153-170. Easton, Pa. [The maho, a useful tree providing primitive man with fiber, bark cloth, and wood for the kindling of fire, is of interest as a clue in the inquiry concerning contact between the Pacific Islanders and pre-Columbian America. The maho is considered to be a native of America, but it appears to have been distributed over the islands and shores of the Pacific and Indian Oceans before the arrival of Europeans. Supporting the evidence from cultivation is the close similarity between Peruvian and Polynesian names of the tree.]

HOSSEUS, C. C. *Vergleichende Studien alt- und neuweltlicher Vegetation der Gebirge*. *Zeitschr. des Deutschen Wiss. Vereins zur Kultur- und Landeskunde Argentiniens*, Vol. 1, 1915, No. 2, pp. 81-107. Buenos Aires.

LYONS, H. G. *The meteorological resources of the Empire*. *Map. Quart. Journ. Royal Meteorol. Soc.*, No. 186, Vol. 44, 1918, pp. 70-89. [Presidential address, at the annual general meeting, Jan. 16, 1918. A map shows the distribution of climatological stations throughout British possessions.]

NAÓN, R. S. *The European War and Pan Americanism*. *Columbia Univ. Quart.*, Vol. 21, 1919, No. 2, pp. 85-97. New York. [This writer, for six years Argentine Ambassador to the United States, believes that geographical, economic, and psychological factors make an effective league of nations impossible at the present time but that the same factors favor the development of Pan-Americanism, upon which, as a model, may later be reared a comprehensive world union.]

PARRISH, S. L. *Self-government in the tropics*. 10 pp. *Senate Doc. No. 364, 64th Congr., 1st Sess.* Washington, D. C., 1916.

MATHEMATICAL GEOGRAPHY

ASTRONOMICAL GEOGRAPHY

BOCCARDI, GIOVANNI. **Lezioni di cosmografia.** ix and 233 pp.; maps, diagrs., index. (Manuali Hoepli.) Ulrico Hoepli, Milan, 1916. 6 x 4.

CHAMBERLIN, T. C. **The planetesimal hypothesis.** Reprint from *Scientia*, Vol. 16, 1914, pp. 165-186. Bologna.

FOERSTER, WILHELM. **Kalenderwesen und Kalenderreform.** 49 pp. (Sammlung Vieweg: Tagesfragen aus den Gebieten der Naturwissenschaften und der Technik, No. 13.) Friedr. Vieweg & Sohn, Brunswick, 1914. M. 1.60. 9 x 6.

HILLS, E. H. **The movements of the earth's pole.** Diagrs. *Nature*, No. 2443, Vol. 97, 1916, Aug. 24, pp. 530-535.

LARMOR, JOSEPH, AND N. YAMAGA. **On permanent periodicity in sunspots.** Diagrs. *Proc. Royal Soc.*, No. 654, Ser. A, Vol. 93, 1917, pp. 493-506. London.

MARVIN, C. F. **Diagrams showing conditions and effects of the daylight-saving act.** Diagrs. *Monthly Weather Rev.*, Vol. 46, 1918, No. 2, p. 76. Washington, D. C. [See the note in the November, 1918, *Review*, pp. 449-450, with sample diagram reproduced for latitude 42°; also diagram for latitude 60° in the March, 1919, *Journ. of Geogr.*, p. 115.]

PRZYBYŁŁOK, E. **Die Polhöhwenschwankungen.** 41 pp.; diagrs., ills. (Sammlung Vieweg: Tagesfragen aus den Gebieten der Naturwissenschaften und der Technik, No. 11.) Friedr. Vieweg & Sohn, Brunswick, 1914. M. 1.60. 9 x 5½.

— **Total eclipse of the sun, June 18, 1918.** 32 pp.; maps. *Suppl. to the American Ephemeris, 1918.* Nautical Almanac Office, U. S. Naval Observatory, Washington, D. C., 1917.

PHYSICAL GEOGRAPHY

GEOLOGY AND GEOMORPHOLOGY

CARANDELL, JUAN, AND BARTOLOMÉ DARDER. **Apuntes sobre el origen de las montañas.** Diagrs. Reprinted from *Bol. Real Soc. Española de Hist. Nat.*, Vol. 18, 1918, pp. 282-290. Madrid.

DAVIS, W. M. **Coral reefs and submarine banks.** Diagrs. *Journ. of Geol.*, Vol. 26, 1918, No. 3, pp. 198-223; No. 4, pp. 289-309; No. 5, pp. 385-411.

EMERSON, B. K. **Recurrent tetrahedral deformations and intercontinental torsions.** Map. *Proc. Amer. Philos. Soc.*, Vol. 56, 1917, No. 6, pp. 445-472. Philadelphia.

EMMONS, W. H. **The principles of economic geology.** xviii and 606 pp.; maps, diagrs., ills., index. McGraw-Hill Book Co., Inc., New York, 1918. \$4.00. 9 x 6.

IDDINGS, J. P. **The problem of volcanism.** xvi and 273 pp.; map, diagrs., ills., index. (Mrs. Hepsa Ely Silliman Memorial Lectures, Vol. 12.) Yale University, New Haven, 1914. \$5.00. 9½ x 6½.

JACKSON, J. W. **The association of faceted pebbles with glacial deposits.** Ills. *Memoirs and Proc. Manchester Literary & Philos. Soc.*, Vol. 62, 1917-18, Part III, No. 9, pp. 1-15.

JEHU, T. J. **Rock-boring organisms as agents in coast erosion.** Ills. *Scottish Geogr. Mag.*, Vol. 34, 1918, No. 1, pp. 1-11.

KINDLE, E. M. **Recent and fossil ripple-mark.** iii and 121 pp.; diagrs., ills. *Geol. Survey of Canada Museum Bull. No. 25: Geol. Ser. No. 34.* Ottawa, 1917. [A descriptive study of "the phases of ripple-mark phenomena met with on sandy sediments and their correlation with the geologic agencies which produce them." The study is illustrated by admirable "photographs and profiles from casts of plaster of Paris moulds taken directly from ripple-mark shortly after its formation and from fossil ripple-mark."]

MOHOROVIĆIĆ, A. **Die Bestimmung des Epizentrums eines Nahbebens.** *Beiträge zur Geophysik: Zeitschr. für Physikalische Erdkunde*, Vol. 14, 1916, No. 3, pp. 199-205. Leipzig.

MOHOROVIĆIĆ, S. **Die reduzierte Laufzeitkurve und die Abhängigkeit der Herdtiefe eines Bebens von der Entfernung des Inflexionspunktes der primären Laufzeitkurve.** Diagrs. *Beiträge zur Geophysik: Zeitschr. für Physikalische Erdkunde*, Vol. 14, 1916, No. 3, pp. 187-198. Leipzig.

MORRISON, J. T. **On the internal structure of the earth.** Diagr. *South African Journ. of Sci.*, Vol. 15, 1918, No. 2, pp. 31-44. Cape Town.

OLDHAM, R. D. **The interior of the earth.** *Geol. Mag.*, Decade 6, Vol. 6, 1919, No. 1, pp. 18-27. London.

RUEDEMANN, RUDOLF. **On some fundamentals of Pre-Cambrian paleogeography.** Map. *Proc. Natl. Acad. of Sci.*, Vol. 5, 1919, No. 1, pp. 1-6. Baltimore.

HYDROGRAPHY AND OCEANOGRAPHY

McEWEN, G. F. **Oceanic circulation and its bearing upon attempts to make seasonal weather forecasts.** 20 pp.; bibliogr. *Bull. Scripps Inst. for Biol. Research No. 7.* [Berkeley, Cal.], 1918.

This paper epitomizes for the general reader the development of methods of observing oceanic circulation, the evolution of ideas thereof, and their relation to problems of meteorology. The first serious theory of oceanic circulation was formulated by Leonardo da Vinci in 1500. He wrote that the water of the torrid zone was reduced in density by the high temperature, thus giving rise to a deep undercurrent flowing from the poles to replace the surface water flowing out from the equator. In the seventeenth century, when the winds and ocean currents over most of the globe were known to some extent, it became apparent that the winds moved the surface waters of the oceans and were largely responsible for the ocean currents. By the early part of the nineteenth century much more accurate information concerning ocean currents was at hand, chiefly through Captain Cook's discoveries, the use of the chronometer (making possible the accurate location of vessels at sea), and the extensive employment of bottles. Franklin, in 1775, made the first temperature observations in the Gulf Stream and was the first to apply such observations to practical problems of navigation (cf. *Geogr. Rev.*, Vol. 4, 1917, p. 201, footnote). Humboldt, in 1814, published a detailed and accurate description of the currents in the North Atlantic. He appreciated the essentially variable character of ocean currents and, consequently, saw the need of continuous observations the year round. Following Rennell, who espoused the theory of the winds as the chief cause of oceanic circulation, and Arago, who first emphasized the importance of the deflective effect of the earth's rotation, Humboldt, in 1845, expressed his belief that several causes of ocean currents must be considered simultaneously. Maury, in 1850, held that the prevailing drift was the result of differences in density and that the motion thus produced might be modified by winds, rain, barometric pressure, and evaporation.

During the past few decades the application of the results of hydrodynamical laboratory observations and theories to explain the complex movements of ocean waters has largely failed to be conclusive. It is now generally admitted that ocean currents are due to various external forces—the wind or friction of a neighboring current, differences in pressure resulting from evaporation, precipitation, and differences in specific gravity—and are modified by the deflecting force due to the earth's rotation and by the internal friction of water. In studying an ocean current it is thus best to think of it as the sum of many components due to many different causes, both internal and external. The subject is so vast and complex that only through international co-operation can rapid advances be made.

The bearing of investigations of oceanic circulation upon seasonal weather forecasting has already been touched upon in the *Geographical Review*, and detailed discussion is to be found in the *Monthly Weather Review*, November, 1918 (pp. 510-512).

A useful bibliography on physical oceanography and the meteorological aspects of oceanography occupies the last two pages of this interesting historical sketch.

CHARLES F. BROOKS

BROOKS, C. F. **Ocean temperatures in long-range forecasting.** *Monthly Weather Rev.*, Vol. 46, 1918, No. 11, pp. 510-512. Washington, D. C. ["Paper presented at the Baltimore meeting of the Association of American Geographers, Dec. 28, 1918." Also published in *Scientific American Supplement*, No. 2254, Vol. 87, 1919, March 15, pp. 166-167.]

COLOSI, GIUSEPPE. **Per una classificazione delle regioni zoogeografiche marine.** Map, bibliogr. *Memorie Geogr.* (Suppl. to *Riv. Geogr. Italiana*) No. 37 (Vol. 13, pp. 1-54). Florence, 1919.

LITTLEHALES, G. W. **The physical characteristics of the ocean depths.** Maps, diags. *U. S. Naval Inst. Proc.*, No. 191, Vol. 45, 1919, January, pp. 45-60. Annapolis.

STIASNY, GUSTAV. **Das Plankton des Meeres.** 160 pp.; maps, diags., ill., index. (Sammlung Götschen, No. 675.) G. J. Götschen'sche Verlagshandlung, Berlin & Leipzig, 1913. 90 pfg. 6½ x 4.